

REMARKS / DISCUSSION OF ISSUES

Claims 1-7, 9-10, and 13-17 are pending in the application.

The applicants thank the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority documents, and acknowledging that the drawings are acceptable.

The Office action rejects claims 1, 5, 9-10, and 13-17 under 35 U.S.C. 102(e) over Johnston et al. (USP 7,131,007, hereinafter Johnston). The applicants respectfully traverse this rejection.

MPEP 2131 states:

"A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The *identical invention* must be shown in as *complete detail* as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1, upon which claims 2-7 depend, claims a method that includes applying a window shaping function to a sequence of values, wherein the integral over the width of the window shaping function is zero. Claim 9, upon which claim 10 depends, claims an apparatus having a similar limitation. Claim 13, upon which claims 14-17 depend, claims a method that includes extracting an estimate of a watermark from a received signal by assuming that the watermark comprises a sequence of values to which a window shaping function has been applied, the integral over the width of the window shaping function being zero.

Johnston fails to teach a window shaping function that is applied to a sequence of values, wherein the integral over the width of the window shaping function is zero.

Johnston specifically teaches:

"Windowing is a simple multiplication between  $\text{win}(n)$  and  $s_k(n)$ ... The window function used for segmenting the signal 102 into blocks is as follows:  
 $\text{win}(n) = \sin((\pi(n+0.5))/N), 0 \leq n \leq N-1$ " (Johnston, column 4, lines 45-55);

and

"The phase window function shown in FIG. 3(a) is defined as:  
 $O(b) = \sin^2((\pi(b+1))/2), -1.0 \leq b \leq 1.0$ " (Johnston, column 5, lines 51-54);

and

"the phase window function, Equation(4), is modified as:  
 $O(b) = \sin^2((\pi(b+m)/(2m)), -m \leq b \leq m$ " (Johnston, column 6, lines 33-35).

Each of Johnston's defined window shaping functions returns a positive value over the range of the function; therefore, an integral of any of these window shaping functions over a width of the function cannot be zero.

The Office action refers to waveforms in Johnston's FIG. 3(b) for teaching a window shaping function having an integral over the width of the function of zero. However, Johnston's FIG. 3(b) does not illustrate Johnston's window shaping function, and the Office action fails to identify where Johnston teaches that a waveform of FIG. 3(b) corresponds to a window shaping function.

The applicants respectfully note that the waveform of FIG. 3(b) that is shaded in the illustration of the Office action corresponds to a product of message bits and Johnston's window shaping function, using a -1 and +1 encoding of the message bits for logic values of zero and one, respectively. The example message bits are illustrated below the example waveform. When the value of message bit is zero, the illustrated product is negative; when the value of message bit is one, the illustrated product is positive. This correlation between the value of the message bit and the value of the product of the message bit and the window shaping function can only exist if the window shaping function does not change sign. If the window shaping function does not change sign, the integral of the function cannot be zero.

Because Johnston does not teach a window shaping function having an integral value of zero over its width, as claimed in each of the applicants' independent claims, the applicants respectfully maintain that the rejection of claims 1, 5, 9-10, and 13-17 under 35 U.S.C. 102(e) over Johnston is unfounded, per MPEP 2131, and should be withdrawn.

The Office action rejects:

claims 2-4 under 35 U.S.C. 103(a) over Johnston and Depalle et al. (USP 5,401,897),

claim 6 under 35 U.S.C. 103(a) over Johnston and Levine et al. (USP 6,209,094), and

claim 7 under 35 U.S.C. 103(a) over Johnston and Harris ("On the Use of Windows for Harmonic Analysis with Discrete Fourier Transform"). The applicants respectfully traverse these rejections.

MPEP 2142 states:

"To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

Claims 2-4 and 6-7 depend upon claim 1, and in these rejections, the Office action relies upon Johnston for teaching the elements of claim 1. As noted above, Johnston fails to teach the elements of claim 1. Accordingly, the applicants respectfully maintain that the rejections of claims 2-4 and 6-7 under 35 U.S.C. 103(a) that rely upon Johnston for teaching the elements of claim 1 are unfounded, per MPEP 2142, and should be withdrawn.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the rejections of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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